Remarks

By this amendment, claims 1, 16, 24 and 39 have been amended and claims 2, 17 and 25 have been cancelled without prejudice or disclaimer. Claims 1, 3-16, 18-24, and 26-39 remain pending. Support for the instant amendments is provided throughout the as-filed application. Thus, no new matter is believed to have been added. In view of the following comments, allowance of all the claims pending in the application is respectfully requested.

Claims 1-8, 10-12, 14, 15, 22-29, 33-35, 37 and 38 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Japanese Patent Application Publication No. JP 11-040657A to Sato et al. ("Sato") in view of U.S. Patent No. 6,469,773 to Iwamoto ("Iwamoto"). Applicant traverses.

Claim 1

Applicant submits that the cited portions of Sato and Iwamoto do not appear to at least disclose or teach a lithographic apparatus wherein, *inter alia,* the support is associated with a clamping device which is arranged to subject a second side of the patterning device to at least one second force normal to the direction of the acceleration, at least when the support is accelerated, and to dynamically vary the at least one second force during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device, the first and second side of the patterning device situated substantially opposite each other, as recited in claim 1.

Applicant submits, as apparently acknowledged in the Office Action, that the cited portions of Sato fail to disclose or teach a clamping device arranged to subject a second side of the patterning device to at least one

second force normal to the direction of the acceleration, at least when the support is accelerated, and to dynamically vary the at least one second force during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device.

Even assuming *arguendo* that the cited portions of Sato and Iwamoto are properly combinable (which Applicant does not concede), the cited portions of Iwamoto do not appear to address all of the deficiencies of the cited portions of Sato. In particular, the cited portions of Iwamoto do not appear to disclose or teach, *inter alia*, a clamping device which is arranged to subject a second side of the patterning device to at least one second force normal to the direction of the acceleration, at least when the support is accelerated, and to dynamically vary the at least one second force during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device, as recited in claim 1.

For example, the cited portions of Iwamoto fail to provide any teaching of applying a second force normal to the direction of the acceleration, let alone any teaching of dynamically varying such a force normal to the direction of the acceleration during motion of the patterning device in an automatic fashion. Rather, the cited portions of Iwamoto appear to be directed to applying a force parallel to the direction of the acceleration.

Indeed, Iwamoto appears to teach away from the cited portions of Sato. To address the deficiencies of holding a substrate by a vacuum source on one side of the substrate, Iwamoto teaches to apply a force to a perpendicular side of the substrate in a direction parallel to the direction of the acceleration of the substrate. This contrasts with application with a force on opposite sides of the substrate in Iwamoto and perpendicular to the direction of the acceleration of the substrate.

Moreover, even if the teachings of Iwamoto were properly combinable into the Sato arrangement (which Applicant does not concede), , the

predictable use (per the *KSR v. Teleflex* Supreme Court case) of Iwamoto in the Sato arrangement would be to provide the lever, hinge and counter mass of Sato to apply a force to a side of the mask in Sato in a direction parallel to the acceleration of the mask in Sato. There is no indication in Iwamoto of dynamically varying a force normal to the direction of the acceleration during motion of the patterning device in an automatic fashion or of doing so in Sato.

Claim 24

Applicant submits that the cited portions of Sato and Iwamoto do not appear to at least disclose or teach a device manufacturing method comprising, *inter alia*, subjecting a second side of the patterning device to at least one second force normal to the direction of the acceleration of the support, at least when the support is accelerated, the at least one second force being dynamic during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device, the first and second side of the patterning device situated substantially opposite each other, as recited in claim 24.

Applicant submits, as acknowledged in the Office Action, that the cited portions of Sato fail to disclose or teach subjecting a second side of the patterning device to at least one second force normal to the direction of the acceleration of the support, at least when the support is accelerated, the at least one second force being dynamic during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device.

Even assuming *arguendo* that the cited portions of Sato and Iwamoto are properly combinable (which Applicant does not concede), the cited portions of Iwamoto do not appear to address all of the deficiencies of the cited portions of Sato. In particular, the cited portions of Iwamoto do not

appear to disclose or teach, *inter alia*, subjecting a second side of the patterning device to at least one second force normal to the direction of the acceleration of the support, at least when the support is accelerated, the at least one second force being dynamic during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device, as recited in claim 24.

For example, the cited portions of Iwamoto fail to provide any teaching of subjecting a second side of the patterning device to at least one second force normal to the direction of the acceleration of the support, let alone any teaching of such second force being dynamic during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device. Rather, the cited portions of Iwamoto appear to be directed to applying a force parallel to the direction of the acceleration.

Indeed, Iwamoto appears to teach away from the cited portions of Sato. To address the deficiencies of holding a substrate by a vacuum source on one side of the substrate, Iwamoto teaches to apply a force to a perpendicular side of the substrate in a direction parallel to the direction of the acceleration of the substrate. This contrasts with application with a force on opposite sides of the substrate in Iwamoto and perpendicular to the direction of the acceleration of the substrate.

Moreover, even if the teachings of Iwamoto were properly combinable into the Sato arrangement (which Applicant does not concede), the predictable use (per the *KSR v. Teleflex* Supreme Court case) of Iwamoto in the Sato arrangement would be to provide the lever, hinge and counter mass of Sato to apply a force to a side of the mask in Sato in a direction parallel to the acceleration of the mask in Sato. There is no indication in Iwamoto of dynamically varying a force normal to the direction of the acceleration during motion of the patterning device in an automatic fashion or of doing so in Sato.

For at least these reasons, the rejection of claims 1 and 24 should be withdrawn. Claims 2-8, 10-12, 14, 15, 22, 23, 25-29, 33-35, 37 and 38 depend from claims 1 and 24 and therefore are allowable over the cited portions of Sato and Iwamoto for the reasons noted above with respect to claims 1 and 24 respectively, as well as for the features they recite individually.

Claims 12, 14, 15, 35, 37 and 38 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Sato and Iwamoto further in view of U.S. Patent Application Publication No. 2003/0197841 to Araki et al. ("Araki"). Applicant traverses.

Claims 12, 14, 15, 35, 37 and 38 depend from claims 1 and 24 respectively and therefore are allowable over the cited portions of Sato and Iwamoto for the reasons noted above with respect to claims 1 and 24 respectively, as well as for the features they recite individually.

Even assuming *arguendo* that the cited portions of Sato, Iwamoto and Araki are properly combinable (which Applicant does not concede), the cited portions of Araki do not appear to address all of the deficiencies of the cited portions of Sato and Iwamoto. For example, the cited portions of Araki do not appear to disclose or teach, *inter alia*, the support is associated with a clamping device which is arranged to subject a second side of the patterning device to at least one second force, at least when the support is accelerated, and to dynamically vary the at least one second force during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device, as recited in claims 12, 14 and 15, nor disclose or teach, *inter alia*, subjecting a second side of the patterning device to at least one second force normal to the direction of the acceleration of the support, at least when the support is accelerated, the at least one second

force being dynamic during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device, as recited in claims 35, 37 and 38.

For at least these reasons, the rejection of claims 12, 14, 15, 35, 37 and 38 should be withdrawn.

Claims 13 and 36 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Sato and Iwamoto further in view of U.S. Patent No. 4,795,518 to Meinel ("Meinel"). Applicant traverses.

Claims 13 and 36 depends from claims 1 and 24 respectively and therefore are allowable over the cited portions of Sato and Iwamoto for the reasons noted above with respect to claims 1 and 24 respectively, as well as for the features they recite individually.

Even assuming *arguendo* that the cited portions of Sato, Iwamoto and Meinel are properly combinable (which Applicant does not concede), the cited portions of Meinel do not appear to address all of the deficiencies of the cited portions of Sato and Iwamoto. For example, the cited portions of Meinel do not appear to appear to disclose or teach, *inter alia*, the support is associated with a clamping device which is arranged to subject a second side of the patterning device to at least one second force, at least when the support is accelerated, and to dynamically vary the at least one second force during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device, as recited in claim 13, nor disclose or teach, *inter alia*, subjecting a second side of the patterning device to at least one second force normal to the direction of the acceleration of the support, at least when the support is accelerated, the at least one second force being dynamic during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device, as

recited in claim 36.

For at least these reasons, the rejection of claims 13 and 36 should be withdrawn.

Claims 7, 9, 30 and 32 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Sato and Iwamoto further in view of U.S. Patent No. 5,847,813 to Hirayanagi ("Hirayanagi"). Applicant traverses.

Claims 7, 9, and 32 depend from claims 1 and 24 respectively and therefore are allowable over the cited portions of Sato and Iwamoto for the reasons noted above with respect to claims 1 and 24 respectively, as well as for the features they recite individually.

Even assuming *arguendo* that the cited portions of Sato, Iwamoto and Hirayanagi are properly combinable (which Applicant does not concede), the cited portions of Hirayanagi do not appear to address all of the deficiencies of the cited portions of Sato and Iwamoto. For example, the cited portions of Hirayanagi do not appear to disclose or teach, *inter alia*, the support is associated with a clamping device which is arranged to subject a second side of the patterning device to at least one second force, at least when the support is accelerated, and to dynamically vary the at least one second force during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device, as recited in claims 7 and 9, nor disclose or teach, *inter alia*, subjecting a second side of the patterning device to at least one second force normal to the direction of the acceleration of the support, at least when the support is accelerated, the at least one second force being dynamic during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device, as recited in claims 32.

For at least these reasons, the rejection of claims 7, 9, and 32 should

be withdrawn.

Claims 8 and 31 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Sato/Iwamoto/Hirayanagi and Sato/Iwamoto further in view of Meinel. Applicant traverses.

Claims 8 and 31 depends from claims 1 and 24 respectively and therefore are allowable over the cited portions of Sato/Iwamoto/Hirayanagi and Sato/Iwamoto for the reasons noted above with respect to claims 7 and 30 respectively, as well as for the features they recite individually.

Even assuming *arguendo* that the cited portions of Sato, Iwamoto, Hirayanagi and Meinel are properly combinable (which Applicant does not concede), the cited portions of Meinel do not appear to address all of the deficiencies of the cited portions of Sato/Iwamoto/Hirayanagi and Sato/Iwamoto. For example, the cited portions of Meinel do not appear to appear to disclose or teach, *inter alia*, the support is associated with a clamping device which is arranged to subject a second side of the patterning device to at least one second force, at least when the support is accelerated, and to dynamically vary the at least one second force during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device, as recited in claim 8, nor disclose or teach, *inter alia*, subjecting a second side of the patterning device to at least one second force normal to the direction of the acceleration of the support, at least when the support is accelerated, the at least one second force being dynamic during motion of the patterning device in an automatic fashion depending on a magnitude of motion of the patterning device, as recited in claim 31.

For at least these reasons, the rejection of claims 8 and 31 should be withdrawn.

Claims 16-18, 20, 21 and 39 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Sato in view of Hirayanagi. Applicant traverses.

Claim 16

Applicant submits that the cited portions of Sato and Hirayanagi do not appear to at least disclose or teach a support constructed to support a first side of a patterning device, the pattering device capable of imparting a radiation beam incident on a second side of the patterning device with a pattern in its cross-section to form a patterned radiation beam, wherein, *inter alia*, the support is associated with a clamping device which is releasably attached to a surface of the support extending substantially perpendicularly to the first side of the patterning device and facing towards the patterning device, the clamping device arranged to subject the second side of the patterning device to an additional clamping force, at least when the support is accelerated, the first and second side of the patterning device situated substantially opposite each other, as recited in claim 16.

Applicant submits, as acknowledged in the Office Action, that the cited portions of Sato fail to disclose or teach a clamping device which is releasably attached to a surface of the support extending substantially perpendicularly to the first side of the patterning device and facing towards the patterning device, the clamping device arranged to subject the second side of the patterning device to an additional clamping force, at least when the support is accelerated.

Even assuming *arguendo* that the cited portions of Sato and Hirayanagi are properly combinable (which Applicant does not concede), the cited portions of Hirayanagi do not appear to address all of the deficiencies of the cited portions of Sato.

For example, the cited portions of Hirayanagi do not disclose or

otherwise render obvious clamping device which is releasably attached to a surface of the support extending substantially perpendicularly to the first side of the patterning device and facing towards the patterning device. There does not appear to be any such surface in Figure 6(b) of Hirayanagi. The relied on side surfaces of lower portion 40b do not face the mask 41.

Further, the Office Action refers to clamps 45 of Hirayanagi. However, there is no indication that they are releasably attached to lower portion 40b. Rather, they may be pivotable like the clamp of Sato.

Hirayanagi also appears to teach away. In particular, Hirayanagi appears to indicate that one should use the clamps 45 in the circumstance where the mask cannot be held via its bottom surface. See, e.g., Hirayanagi, col. 4, lines 38-42 (discussing, in relation to Figure 1, a mask that cannot be held by electrostatic attraction via its bottom surface) and col. 4, lines 56-65 (discussing a solution involving clamping the mask from the top side). Thus, Hirayanagi would teach away from subjecting the first side of the patterning device to at least one first force, and subjecting the second side of the patterning device to at least one second force. To Hirayanagi, it is one or the other – a clamping force on a first side or a clamping force on another side.

Claim 39

Applicant submits that the cited portions of Sato and Hirayanagi do not appear to at least disclose or teach a method comprising, *inter alia*, releasably attaching a clamping device to a surface of the support extending substantially perpendicularly to the first side of the patterning device and facing towards the patterning device; subjecting the first side of the patterning device to at least one first force normal to the direction of the acceleration so that an acceleration of the patterning device with respect to the support is suppressed by frictional forces occurring at a contact area between the patterning device and the support; and subjecting the second

side of the patterning device to at least one second force normal to the direction of the acceleration of the support, at least when the support is accelerated, using the clamping device, as recited in claim 39.

Applicant submits, as acknowledged in the Office Action, that the cited portions of Sato fail to disclose or teach releasably attaching a clamping device to a surface of the support extending substantially perpendicularly to the first side of the patterning device and facing towards the patterning device, and subjecting the second side of the patterning device to at least one second force normal to the direction of the acceleration of the support, at least when the support is accelerated, using the clamping device.

Even assuming *arguendo* that the cited portions of Sato and Hirayanagi are properly combinable (which Applicant does not concede), the cited portions of Hirayanagi do not appear to address all of the deficiencies of the cited portions of Sato.

For example, the cited portions of Hirayanagi do not disclose or otherwise render obvious releasably attaching a clamping device to a surface of the recited support, the surface extending substantially perpendicularly to the first side of the patterning device and facing towards the patterning device. There does not appear to be any such surface in Figure 6(b) of Hirayanagi. The relied on side surfaces of lower portion 40b do not face the mask 41.

Further, the Office Action refers to clamps 45 of Hirayanagi. However, there is no indication that they are releasably attached to lower portion 40b. Rather, they may be pivotable like the clamp of Sato.

Hirayanagi also appears to teach away. In particular, Hirayanagi appears to indicate that one should use the clamps 45 in the circumstance where the mask cannot be held via its bottom surface. See, e.g., Hirayanagi, col. 4, lines 38-42 (discussing, in relation to Figure 1, a mask that cannot be held by electrostatic attraction via its bottom surface) and col. 4, lines 56-65

(discussing a solution involving clamping the mask from the top side). Thus, Hirayanagi would teach away from subjecting the first side of the patterning device to at least one first force, and subjecting the second side of the patterning device to at least one second force. To Hirayanagi, it is one or the other – a clamping force on a first side or a clamping force on another side.

For at least these reasons, the rejection of claims 16 and 39 should be withdrawn. Claim 17 has been cancelled and so its rejection is now moot. Claims 18, 20 and 21 depend from claim 16 and therefore are allowable over the cited portions of Sato and Hirayanagi for the reasons noted above with respect to claim 16, as well as for the features they recite individually.

Claim 19 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Sato and Hirayanagi and further in view of Meinel. Applicant traverses.

Claim 19 depends from claim 18 and therefore is allowable over the cited portions of Sato and Hirayanagi for the reasons noted above with respect to claim 18, as well as for the features it recites.

Even assuming *arguendo* that the cited portions of Sato, Hirayanagi, and Meinel are properly combinable (which Applicant does not concede), the cited portions of Meinel do not appear to address all of the deficiencies of the cited portions of Sato and Hirayanagi. For example, the cited portions of Meinel do not appear to disclose or teach, *inter alia*, a clamping device which is releasably attached to a surface of the support extending substantially perpendicularly to the first side of the patterning device and facing towards the patterning device, the clamping device arranged to subject the second side of the patterning device to an additional clamping force, at least when the support is accelerated, as recited in claim 19.

For at least these reasons, the rejection of claim 19 should be

withdrawn.

Conclusion

Having addressed each of the foregoing rejections, it is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, the application is in condition for allowance. Notice to that effect is respectfully requested.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

If an extension of time is necessary to prevent abandonment of this application, then such an extension of time is hereby petitioned for under 37 C.F.R. §1.136(a). Any fees required (including fees for net addition of claims) are hereby authorized to be charged to our Deposit Account No. 033975 (Ref. No. **81468-0324818**).

Date: July 26, 2010

Respectfully submitted,

By: _____

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